

**WHAT IS CLAIMED IS:**

1. An EAS marker comprising:
  - (a) a first trough-shaped member;
  - (b) a second trough-shaped member, said second trough-shaped member being joined to said first trough-shaped member to form a closed housing defining a cavity; and
  - (c) means disposed within said cavity for emitting a response signal in response to an interrogation signal transmitted by an EAS system.
2. The EAS marker as claimed in claim 1 wherein said response signal emitting means comprises a resonator.
3. The EAS marker as claimed in claim 2 further comprising a biasing element, said biasing element being positioned relative to said resonator so that, when said biasing element is magnetized, said resonator is armed.
4. The EAS marker as claimed in claim 3 wherein said biasing element is disposed within said cavity.
5. The EAS marker as claimed in claim 4 further comprising a separator disposed within said cavity between said resonator and said biasing element for physically separating said biasing element and said resonator.
6. The EAS marker as claimed in claim 5 wherein said biasing element and said resonator are spaced apart by said separator to a distance of approximately 0.010 inch.
7. The EAS marker as claimed in claim 1 wherein each of said first and second trough-shaped members is made of a rigid material.

8. The EAS marker as claimed in claim 7 wherein each of said first and second trough-shaped members is made of molded plastic.

9. The EAS marker as claimed in claim 1 wherein said first trough-shaped member includes a top wall, a pair of side walls, a pair of end walls and an open bottom and wherein said second trough-shaped member includes a bottom wall, a pair of side walls, a pair of end walls and an open bottom, said second trough-shaped member being inserted into and secured to the inside of said first trough-shaped member.

10. The EAS marker as claimed in claim 9 wherein said first and second trough-shaped members are press-fit together.

11. An EAS marker comprising:

(a) a housing comprising a first piece and a second piece matingly secured to one another and defining a cavity therebetween;

(b) a resonator disposed within said cavity; and

(c) a biasing element, disposed within said cavity, for arming said resonator.

12. The EAS marker as claimed in claim 11 wherein said first piece and said second piece are made of a rigid material.

13. The EAS marker as claimed in claim 12 wherein said first piece and said second piece are made of molded plastic.

14. The EAS marker as claimed in claim 11 wherein said first piece and said second piece are press-fit together.

15. The EAS marker as claimed in claim 11 further comprising a separator disposed within said cavity for physically separating said resonator and said biasing element, said resonator being disposed between said resonator and said biasing element.

16. The EAS marker as claimed in claim 15 wherein said separator is a rigid member.

17. The EAS marker as claimed in claim 16 wherein said separator is made of molded plastic.

18. An EAS marker comprising:

(a) a generally rectangular, closed housing made of a rigid material, said generally rectangular, closed housing having a cavity;

(b) a resonator disposed within said cavity; and

(c) a biasing element, disposed within said cavity, for arming said resonator.

19. The EAS marker as claimed in claim 18 further comprising a separator disposed within said cavity for physically separating said resonator and said biasing element, said resonator being disposed between said resonator and said biasing element.

20. The EAS marker as claimed in claim 19 wherein said separator is a rigid member.

21. An EAS marker comprising:

(a) a resonator container, said resonator container having a cavity and an open top;

(b) a resonator disposed within said cavity of said resonator container;

(c) a separator positioned over said open top of said resonator container;

(d) a biasing element disposed on top of said separator for arming said resonator; and

(e) a cover, said cover having a chamber and open bottom, said resonator container, said separator and said biasing element being disposed within said chamber and secured to said cover.

22. The EAS marker as claimed in claim 21 wherein said cover has a recessed area in which said biasing element is situated.

23. The EAS marker as claimed in claim 22 wherein said recessed area has dimensions complementary to that of said biasing element.

24. The EAS marker as claimed in claim 23 wherein said separator and said resonator container are joined to said cover by a press-fit.

25. The EAS marker as claimed in claim 21 wherein one or more of said resonator container, said separator and said cover is made of a rigid material.

26. The EAS marker as claimed in claim 21 wherein one or more of said resonator container, said separator and said cover is made of a rigid molded plastic.

27. The EAS marker as claimed in claim 21 wherein each of said resonator container, said separator and said cover is made of a rigid molded plastic.

28. An EAS marker comprising:

- (a) a housing, said housing having a cavity;
- (b) a resonator disposed within said cavity;
- (c) a biasing element disposed within said cavity for arming said resonator;

and

(d) a separator positioned within said cavity between said resonator and said biasing element for physically separating said resonator and said biasing element, said separator being made of a rigid material.

29. The EAS marker as claimed in claim 28 wherein said separator is made of molded plastic.

30. The EAS marker as claimed in claim 28 wherein said biasing element is disposed on top of said separator and wherein said separator is positioned over said resonator.

31. The EAS marker as claimed in claim 30 wherein said separator has a top surface and a bottom surface, said top surface being flat, said bottom surface being shaped to include a projection extending downwardly for a distance beyond the remainder of said bottom surface.

32. The EAS marker as claimed in claim 31 wherein the distance between said top surface of said separator and the bottom of said projection is approximately 0.010 inch.

33. The EAS marker as claimed in claim 31 wherein said bottom surface is shaped to include at least two projections extending downwardly for a distance beyond the remainder of said bottom surface.

34. The EAS marker as claimed in claim 31 wherein said resonator has a non-vibrating node and wherein said projection is dimensioned and positioned relative to said resonator to contact said resonator only at said node.

35. An EAS marker comprising:

(a) a resonator container, said resonator container having a cavity and an open top;

(b) a resonator disposed within said cavity of said resonator container;

(c) a separator positioned over said open top of said resonator container, said separator having a non-uniform cross-sectional thickness; and

(d) a biasing element disposed on top of said separator for arming said resonator.

36. The EAS marker as claimed in claim 35 further comprising a cover, said cover being secured to said separator and encasing said biasing element therebetween.

37. The EAS marker as claimed in claim 35 wherein said separator is made of molded plastic.

38. The EAS marker as claimed in claim 35 wherein said separator has a top surface and a bottom surface, said top surface being flat, said bottom surface being shaped to include a projection extending downwardly for a distance beyond the remainder of said bottom surface.

39. The EAS marker as claimed in claim 38 wherein the distance between said top surface of said separator and the bottom of said projection is approximately 0.010 inch.

40. The EAS marker as claimed in claim 38 wherein said bottom surface is shaped to include at least two projections extending downwardly for a distance beyond the remainder of said bottom surface.

41. The EAS marker as claimed in claim 38 wherein said resonator has a non-vibrating node and wherein said projection is dimensioned and positioned relative to said resonator to contact said resonator only at said node.

42. An EAS marker comprising:

(a) a resonator container, said resonator container having a cavity and an open top;

- (b) a resonator disposed within said cavity of said resonator container;
- (c) a separator positioned over said open top of said resonator container, said separator being made of a rigid material and being shaped to define at least one downwardly-extending projection; and
- (d) a biasing element disposed on top of said separator for arming said resonator.

43. The EAS marker as claimed in claim 42 wherein said separator is shaped to define at least two downwardly-extending projections.

44. An EAS marker comprising:

- (a) a housing, said housing having a cavity and a top wall, said top wall having a recessed area facing said cavity;
- (b) a resonator disposed within said cavity;
- (c) a biasing element for arming said resonator, said biasing element being positioned within said recessed area; and
- (d) a separator disposed within said cavity between said resonator and said biasing element for physically separating said resonator and said biasing element, said separator retaining said biasing element in said recessed area.

45. The EAS marker as claimed in claim 44 wherein said recessed area has dimensions complementary to said biasing element.

46. The EAS marker as claimed in claim 44 wherein said separator is secured to said top wall of said housing.

47. The EAS marker as claimed in claim 46 wherein said separator is press-fit against said top wall of said housing.

48. An EAS marker comprising:

(a) a first molded member made of a rigid plastic, said first molded member being generally rectangular and having a bottom wall, a pair of side walls, a pair of end walls and an open top;

(b) a second molded member made of a rigid plastic, said second molded member being generally rectangular and having a top wall, a pair of side walls, a pair of end walls and an open bottom, said top wall having a recessed area;

(c) a third molded member made of a rigid plastic, said third molded member having a flat top surface, a non-uniform cross-sectional thickness, and a bottom surface shaped to include a projection extending downwardly for a distance beyond the remainder of said bottom surface, the distance between said top surface of said third molded member and the bottom of said projection being approximately 0.010 inch;

(d) said third molded member being secured within said second molded member, with said top surface of said third molded member being press-fit against the interior surface of said top wall of said second molded member;

(e) said first molded member being secured within said second molded member, with said side walls and said end walls of said second molded member being press-fit against the interior surfaces of said side walls and said end walls of said first molded member and against the bottom surface of said third molded member;

(f) said first and third molded members defining a resonator cavity;



(g) a resonator, said resonator being disposed within said resonator cavity, said resonator being bowed downwardly about its longitudinal axis, said resonator having a non-vibration node;

(h) said projection of said third molded member being aligned with and dimensioned to contact only said non-vibration node of said resonator;

(i) a biasing element for arming said resonator, said biasing element being disposed within said recessed area of said second molded member.

49. The EAS marker as claimed in claim 48 wherein said recessed area of said second molded member has dimensions complementary to that of said biasing member.

50. The EAS marker as claimed in claim 49 further comprising an adhesive applied to the exterior surface of one of said second molded member and the bottom wall of said first molded member.

51. The EAS marker as claimed in claim 50 further comprising a peelable liner applied to said adhesive.

52. The EAS marker as claimed in claim 51 wherein said adhesive is disposed on the exterior surface of the bottom wall of said second molded member.

53. A method of manufacturing a container for use in an EAS marker, said method comprising the step of continuously molding a web of plastic material, said web being shaped to include at least one container adapted to hold an EAS component.

54. The method as claimed in claim 53 wherein said step of continuously molding said web comprises rotary extrusion molding said web.

55. The method as claimed in claim 53 further comprising the step of separating said container from the remainder of said web.

56. The method as claimed in claim 53 wherein said web is shaped to include a plurality of containers each adapted to hold an EAS component.

57. The method as claimed in claim 53 wherein said web is shaped to include a plurality of containers each adapted to hold an EAS component, said containers being arranged in an orthogonal matrix with multiple containers arrayed across the width of said web.

58. The method as claimed in claim 53 wherein said web is shaped to include a plurality of containers each adapted to hold an EAS component, said containers being spaced periodically on said web.

59. The method as claimed in claim 53 wherein said container is a generally rectangular member shaped to include a bottom wall, a pair of side walls, a pair of end walls and an open top.

60. A method of manufacturing an EAS marker, said method comprising the steps of:

- (a) continuously molding a container, said container having a cavity and an opening for permitting access to said cavity; and

- (b) inserting through said opening and into said cavity of said continuously molded container means for emitting a response signal in response to an interrogation signal transmitted by an EAS system.

61. The method as claimed in claim 60 wherein said emitting means comprises a resonator.

62. The method as claimed in claim 61 further comprising, after said inserting step, the step of covering said opening so as to encase said resonator within said container.

63. The method as claimed in claim 62 further comprising, prior to said covering step, the step of inserting into said cavity a biasing element for arming said resonator.

64. A method of manufacturing a magnetostrictive EAS marker, said method comprising the steps of:

- (a) providing a resonator container, said resonator container having a resonator cavity and an open top;
- (b) inserting a resonator into said resonator cavity through said open top;
- (c) providing a biasing element container, said biasing element container having a biasing element cavity and an open bottom;
- (d) inverting said biasing element container;
- (e) inserting a biasing element into said biasing element cavity of said inverted biasing element container;
- (f) encasing said biasing element within said biasing element container with a separator;
- (g) inverting said biasing element container to its original orientation; and
- (h) joining said resonator container and said biasing element container to form a magnetostrictive EAS marker comprising a resonator and a biasing element wherein said resonator and said biasing element are separated by said separator.

65. The method as claimed in claim 64 wherein at least one of said resonator container, said biasing element container and said separator is formed by continuous molding on one or more webs.

66. A method of manufacturing a magnetostrictive EAS marker, said method comprising the steps of:

(a) continuously molding a first web, said first web comprising a plurality of resonator containers, each of said resonator containers having a resonator cavity and an open top;

(b) inserting a resonator into through the open top and into the resonator cavity of a first resonator container on said first web, whereby a first marker subassembly is formed;

(c) continuously molding a second web, said second web comprising a plurality of biasing element containers, each of said biasing element containers having a biasing element cavity and an open bottom;

(d) inverting said second web;

(e) inserting a biasing element into the biasing element cavity of a first biasing element container on said inverted second web;

(f) continuously molding a third web, said third web comprising a plurality of separator elements;

(g) joining a separator element on said third web to a biasing element container on said second web in such a way as to encase said biasing element within said biasing element container, whereby a second marker subassembly is formed; and

(h) joining said first marker subassembly to said second marker subassembly to form a magnetostrictive EAS marker comprising a resonator and a biasing element wherein said resonator and said biasing element are separated by said separator element.

67. The method as claimed in claim 66 further comprising the step of separating said magnetostrictive EAS marker from the remainders of said first, second and third webs.

68. The method as claimed in claim 66 wherein said step of joining said separator element to said biasing element container comprises laminating said separator element on said third web to said biasing element container on said second web at a first lamination nip.

69. The method as claimed in claim 68 wherein said first lamination nip is formed by a pair of rollers.

70. A method of forming a laminate structure, said method comprising the steps of:

(a) providing a first web, said first web comprising a plurality of first elements;

(b) providing a second web, said second web comprising a plurality of second elements, said second elements being alignable with said plurality of first elements;

(c) passing said first web and said second web through a lamination nip to join said first elements and second elements.

71. The method as claimed in claim 70 wherein at least one of said first web and said second web is made by continuous molding.